Original

The Relationship Between Illness Perception and Medication Adherence in Hypertensive Patients Attending the General Out-Patient Clinics, Ekiti State University Teaching Hospital, South-West Nigeria

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ABSTRACT

Background: Optimal blood pressure control has been shown to be associated with good adherence to medications and patient's perception. This study sought to assess the relationship between illness perception and medication adherence of patients with hypertension with a view to improving the quality of care and medication adherence among the patients attending the outpatient clinic in Ekiti State.

Methods: A hospital-based cross-sectional study was conducted among 381 adult patients with hypertension who had been on antihypertensive medications for at least three months. A systematic random sampling method was used and a semi-structured interviewer questionnaire was administered to obtain information. Respondents' illness perception was measured, using the Adapted (BIPQ), while the medication adherence was measured using MMAS-8. The data collected was analysed using SPSS version 20.

Results: The mean age of respondents was 62.30±3.84, with 54.9% reported moderate illness perception, 88.5% high illness perception, and 51.2% had good adherence to their medications. Respondents with moderate to high illness perception were about 7.84 and 3.21 times respectively, more likely to have good medication adherence than those with low illness perception. The significant predictors of medication adherence identified were sex, ethnicity, education, occupation, and marital status. There was a positive statistically significant relationship between respondents with moderate to high illness perception and good medication adherence ($\chi^2 = 15.32$, $p = 0.003$).

Conclusion: Clinicians should take cognizance of health and illness behaviours of their patients to reinforce patient perception and educate them on how a positive perception to their illness can enhance their antihypertensive adherence.

Keywords: Illness, perception, medication, adherence, hypertensive

How to cite this article

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INTRODUCTION

Hypertension is a major public health problem associated with high morbidity and mortality rates globally[1]. Globally, about 1 billion adults aged 18 years and above have hypertension with two-thirds of this figure emanating from developing countries[1,2]. By 2025, an estimated 1.56 billion adults worldwide will be living with hypertension while by 2030, 23 million cardiovascular deaths are projected, with 85% occurring in low and middle-income countries. A large percentage of hypertensive subjects have poor blood pressure control due to several reasons and one of the major reasons of poor control is poor medication adherence[3,4,5]. non-adherence to pharmacological therapy is a growing concern worldwide[6]. The factors driving patients' adherence to medication are multifactorial and these include illness perceptions, health literacy, self-efficacy, cognitive abilities, psychosocial factors such as personal and cultural beliefs, healthcare provider relationships as well as health system influence.[5,7] Illness perceptions are defined as the mental representations individuals construct about their illness, arising from the dynamic integration of concrete (schematic) and abstract (conceptual) memory structures. These representations enable individuals to interpret their condition and inform their action plans for managing the illness. The theoretical frame for this study is that of Leventhal theory which presented three prime sources of stimuli that construct illness perception of an individual: 1) experience of bodily symptoms in the past and present occurrence of disease, 2) external social environment such as direct communication from health care providers, family, friends or media, and 3) previous knowledge about the illness that individuals learned from their societies and cultures.[8] Illness perception provide an essential framework for examine patient believe and the impact of its component on health behaviour. The components comprise identity, disease timeline (course of disease), perceived consequences (disease outcome), personal control, treatment control, coping mechanisms, cyclical periods of illness (periods without disease), and emotional representations of the disease.[8] The illness perceptions are modifiable factors and have been reported to be a major factor that influence medication adherence in patients with chronic disease.[9]

The study by Hsiao et al. revealed that the relationship between illness perception and medication adherence was positive and statistically significant, suggesting that the more positive perception the patient had about hypertension, the better their medication adherence was and vice versa.[10]As a result of this, the study is aimed to determine the relationship between illness perception of patients with hypertension and medication adherence with a view to improving the quality of care and medication adherence among the patients attending the outpatient clinic of the hospital.

METHODS

Study setting: This study was carried out at the General Outpatient Clinic (GOPC) of a tertiary hospital in located in Ado Ekiti, the State capital. Ado Ekiti has a population of 308,621 according to the recent 2006 national census and projected to be 480,000 in 2020 according to population stat 2020.[11,12]

Study design/population: This study design was a hospital based cross-sectional study, and the study population was adult patients with hypertension attending GOPC of the study's facility.

Sample size estimation: Sample size was determined using the Leslie Kish's formula for sample size i.e $n=z^2pq/d^2$.[13] With the paucity of studies on illness perception among hypertensive patients; a prevalence of 50% was assumed.[13] An estimated sample size of 381 consenting adult hypertensive patients were used for the study.

Sampling method

Selection criteria: The inclusion criteria consisted consented diagnosed patients with hypertension who have been on antihypertensive medication for at lesast three months, while exclusion criteria were patients with mental illness and those who were critically ill that required emergency.

Sampling Technique: This consisted of systematic random sampling of consenting adult hypertensive patients who had been attending the GOPC for at least 3 months. According to the hospital's health information management department's records in the year 2018, the total number of registered adult hypertensive patient that attended the GOPC, EKSUTH was 3218, that means an average of 268 every month(3218/12=268.17), and the total number of hypertensive patients expected to be seen during this period of study were 805(268.17x3≈805), with about 62 patients per week (5 working days) and 12 patients per day. The sampling interval (sampling frame/sample size) with a recruitment plan of 381 patients was 805/381 which gave 2.1, approximately 2.

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Selection and recruitment procedure: The author arrived at the clinic very early on each clinic day to collect all the patient folders for each day and then looked into the folders to select the folders of all the hypertensive patients. The author now looked into the folder of each hypertensive patient and applied the inclusion and exclusion criteria. The names of those who met the criteria were politely called out from the waiting room to an adjacent room. The author explained to the participants in both English and Yoruba languages the aim and benefits of the study, and the process of participating in it. Informed written consents were also obtained from the participants by the author. Those who did not give consent were excluded from the study. The folder numbers of the remaining consented patients were listed as the sampling frame for the day while the sample interval was two (2). This meant every alternate consenting patient was recruited.

The first participant was selected by simple random sampling by which two small papers were marked '1 YES' and '1 NO'. The first 2 patients on the list were invited to pick one of the marked papers. The patient that picked the YES paper became the first selected respondent for that day. The sampling interval was then applied on the remaining participants in the sampling frame list who were then selected. With this, the required number of selected respondents (6) for each day of the study was gotten. This selection method was repeated on each day till the sample size of 381 was attained at the end of the 13 weeks period of the study.

sampling

Recruitment procedure: A semi-structured, four (4) sectioned interviewer administered questionnaire, drafted in English language. It was translated into Yoruba language for those respondents who spoke Yoruba only and back translated to English language by two certified and separate interpreters to guarantee consistency. The adapted part of the questionnaire was validated by subjecting to face and content validity. The reliability of the instrument was determined using Cronbach alpha and a reliability coefficient of 0.83 was obtained which was within acceptable limits. To ensure construct validity, about six weeks prior to this study, the instrument was pretested among 38 adult hypertensive patients who were attending GOPC of nearby tertiary hospital. The pretesting was to see to the applicability of the instrument and recruitment procedure. Feedback from the pretest and validity assessment lead to some modifications which were made on the instrument to suit the study.

Variables and Instruments: Data were then collected by the researcher using the interviewer administered questionnaire consisting of the following four sections: assessment of socio-demographic characteristics, clinical parameters, assessment of illness perception using adapted BIPQ and MMAS-8

Clinical parameters: This section sought to know the Duration of hypertension, Current blood pressure control status, medications, weight, height and the body mass index (BMI) from the respondents. These were done by the researcher. To measure respondents' BP, they were allowed to rest for at least 5 minutes before the BP was measured twice within 5 minutes interval with a mercury sphygmomanometer (Accoson, England).

Assessment of Illness Perception: In this study, the Brief Illness Perception Questionnaire (BIPQ) designed by Broadbent et al. was adapted to measure the illness perception among respondents. It is a 9-item questionnaire designed to assess each dimension of illness perception, which includes eight 11-point Likert scale questions. Assessment of the causal representation was done by a closed-ended response item, which asked the respondent to tick the three most important factors that they think caused their illness (Item 9) and also called causal item. The first 8 items were measured in a continuous linear scale ranging from 0 to 10 and the 9th item was a closed-ended question without any scales. Item 9 of the questionnaire was slightly modified in such a way that the original open-ended list pattern was modified to close-ended six options, from where respondents can choose. For the purpose of this study, a higher score from the tool indicated higher threatening illness perception or view about hypertension while a lower score, a lower threatening illness perception or view of hypertension. To compute the score, reverse score of items 3, 4, and 7 were added to item 1, 2, 5, 6, and 8. A total score ranging from 0-27 corresponded to low threatening illness perception, 28-54 corresponding to moderate threatening illness perception and 55-80 high threatening illness perception.[14]

Assessment of Medication Adherence: Adherence level was determined using Morisky Medication Adherence Scale-8 (MMAS-8), an 8-item questionnaire with high reliability and validity modified by Krousel Wood et al. from previously validated MMAS-4.[15] The Cronbach's alpha was 0.83 for the MMAS. It was used

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to assess the respondents' medication adherence. The scale is based on patient's response. Response categories were yes/no for each item and for the last item. The total score ranges from 1 to 8 with scores >2 reflecting low adherence, 1 or 2 medium adherence, while 0 reflects high adherence.[15] It offers a relatively cheap and quick method of adherence estimation by clinicians within routine practice.[15]

Operational Definitions and Categories:

In this study, the following definition/categories were used:

1. Illness perception (With Respect of Hypertension): Illness perception refers to patient's integrative cognitive belief and emotional response about the hypertension that affect patient's problem-focused coping with hypertension along these dimensions: identity, cause, timeline, consequences, cure/control, concern, coherence and emotion.[9]
   i. Identity refers to the symptoms he/she experiences or the label the individual associate with the hypertension.
   ii. Cause refers to the belief about the aetiology of the hypertension.
   iii. Timeline refers to the patient's belief about the duration of hypertension.
   iv. Consequences refer to the belief about the impact of the hypertension on the patient's life, belief about the course of and time or period of hypertension
   v. Cure/control refers to belief about whether something can be done to recover from hypertension and efficacy of the treatment.
   vi. Concern refers to something the patient thinks is a problem aroused from hypertension that needs attention.
   vii. Coherence refers to degree of understanding about hypertension.
   viii. Emotions refer to feelings or response aroused in the patient by hypertension.

2. Medication adherence: refers to carrying out required pharmacological instructions continuously and persistently along with voluntary willingness and active participation which contributes in achieving better health outcomes.[16] For the purpose of this study, adherence was measured with the Morisky-Green Medication Adherence Scale (MMAS-8) and medication adherence was divided into two group namely; Poor adherence: respondents with total adherence score >2, Good adherence: respondents with total adherence score 0-2.[15]

3. For the purpose of this study, hypertension was defined according to JNC 8:

Controlled blood pressure: This was defined as systolic blood pressure less than 140mmHg with or without a diastolic blood pressure less than 90mmHg in respondents less than 65 years old or systolic blood pressure equal to or less than 150mmHg with or without a diastolic blood pressure equal to or less than 90mmHg in respondents greater than or equal to 65 years old.

Uncontrolled blood pressure: This was defined as systolic blood pressure equal to or greater than 140mmHg with or without a diastolic blood pressure equal to or greater than 90mmHg in respondents less than 65 years old or systolic blood pressure greater than 150mmHg with or without a diastolic blood pressure greater than 90mmHg in respondents equal to or greater than 65 years old.

Method of Data Analysis: All the data obtained were entered into the computer and analysed using Statistical Package for Social Science version 20 (SPSS). The data were presented in tabular forms, graphs and charts as appropriate. Descriptive statistics, such as mean, mode, median, standard deviations and interquartile range were determined. Association between dependent (medication adherence) and independent variables (illness perception) and socio-demographic characteristics were compared using Pearson's chi-square. The level of statistical significance was taken as p-value of equal or less than 0.05. Logistic regression analysis was used to evaluate the independent predictors of medication adherence.

Ethical consideration: Ethical clearance was obtained from the ethical committee of study's institution with approval number EKSUTH/A64/2019/02/007(26/02/2019). Informed verbal and written consent were obtained from the willing participants.

RESULTS

Socio-demographic Characteristics of Respondents

Of 381 participants, the mean age was 62.3±3.84years. Majority of the participants (68.0%) were females, 51.2% of the participants were married,159(41.7%) were retired, 97.7% were Yorubas while 31.5% had tertiary education. A large number of the respondents were

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Christians (99.6%). Only 21.5% earned less than #18,000. A significant number of participants (73.0%) accessed their care through out-of pocket model.

Table 1: Frequency distribution of respondents by socio-demographic characteristics

Variable	Frequency (N=381)	Percentage (%)
Age (In Years)		
18 -30	3	0.7
31 – 40	9	2.4
41 – 50	51	13.4
51 – 60	83	21.8
61 – 70	94	24.7
>70	141	37.0
Mean ± Sd	*62.3 ± 3.84*	Range: 21-85
Gender		
Male	122	32.0
Female	259	68.0
Marital Status		
Single	29	7.6
Married	195	51.2
Widowed	138	36.2
Divorcee	19	5.0
Educational Status		
None	78	20.5
Primary	87	22.8
Secondary	96	25.2
Tertiary	120	31.5
Occupation		
Housewife	4	1.0
Retired Workers	159	41.7
Civil Servants	112	29.4
Business	48	12.6
Unemployed	58	15.3
Family Type		
Extended/Joint	56	14.7
Nuclear	325	85.3
Monthly Income		
< 18000	82	21.5
18000 – 40000	118	31.0
40001 – 100000	121	31.8
>100000	60	15.7
Religion		
Christian	368	96.6
Islam	10	2.6
Traditional	3	0.8
Ethnicity		
Hausa	2	0.5
Igbo	7	1.8
Yoruba	372	97.7
Care Giver		
Self	145	38.1

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Spouse	79	20.7
Children	88	23.1
Neighbours	57	15.0
Others	12	3.1
Source of Healthcare Finance		
Out-of-pocket		
Health insurance	278	73.0
Others (Charity, NGO)	16	4.2
	87	22.8

Assessment of level of illness perception, level of medication adherence and Blood pressure control of the respondents:

Slightly above half (54.9%) had moderate level of perception while about a quarter (25.7%) perceived that the cause of hypertension was related to stress, followed by obesity (16.5%) and excess salt intake (15.7%); meanwhile 17.1% of the respondents felt that hypertension could be caused by hereditary, advanced age and Spiritual Attack. Slightly above half (51.2%) of the respondents had good adherence to their medications while 48.8% did not adhere to their drugs. Majority of the respondents (61.9%) had good control of their blood pressure while 38.1% were poorly controlled.

Table 2: Assessment of level of illness perception, level of medication adherence and Blood pressure control of the respondents:

Variable	Frequency (N=381)	Percentage (%)
BIPQ (Level of illness perception)		
Low	146	38.3
moderate	209	54.9
high	26	6.8
ABIPQ (Perceived cause of hypertension)		
Weight gain/ Obesity	63	16.5
Lack of Exercise	38	10.0
Excessive Salt Consumption	60	15.7
Alcohol Intake	24	6.3
Smoking	33	8.7
Stress	98	25.7
Others (Hereditary, Age, Spiritual Attack etc)	65	17.1
Level of Medication Adherence		
Good	195	51.2
Poor	186	48.8
Blood Pressure Control		
Controlled BP	236	61.9
Uncontrolled BP	145	38.1

BIP: Brief Illness Perception; BIPQ-Brief Illness perception Questionnaire

Table 3: Showing the scores of all the eight dimensions of Brief Illness Perception

Table 3 showed that the respondents had a high score for treatment control, and understanding of hypertension while a low score on emotional response and concern. Respondents had moderate score on the other items relating to the consequences of hypertension, personal control, identity relating to its risk factors.

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Table 3: Showing the scores of all the eight dimensions of Brief Illness Perception (N=381)

Variable	Min-Max	Median	IQR	Level
Consequences	0-10	5	6	Moderate
Personal Control	2-10	4	5	Moderate
Treatment Control	3-10	8	4	High
Identity	0-10	4	7	Moderate
Concerns	0-10	3	8	Low
Understanding	1-10	7	2	High
Emotional Response	0-10	3	7	Low
BIPQ Overall	14-72	39	35	Moderate

Table 4: Relationship between illness perception and medication adherence
There was a positive statistically significant relationship between respondents with high illness perception and good medication adherence. ($\chi^2 = 15.32$, p= 0.003). Relationship between brief illness perception and medication adherence

Variable	Medication Adherence			
	Good (%) n = 277	Poor (%) n = 104	χ^2	p-value
BIPQ				
Low	72 (49.3)	74 (50.7)	15.32	**0.003**
Moderate	182(87.1)	27 (12.9)		
High	23(88.5)	3(11.5)		

As shown in table 5, Duration of hypertension >24months (3.26times), Controlled Blood pressure(1.74times), and Moderate threatening perception of hypertension(7.84times) and were independent positive predictors of medication adherence among respondents with p-value <0.05. Respondents with the above are more likely to achieve good medication adherence.

Table 5: Logistic Regression for Independent predictors of medication adherence

Variable	Category		95% CI		
		OR	Lower	Upper	p – value
Duration of Hypertension					
	6 – 12	2.31	1.05	6.02	0.033
	13 - 24	1.0 (RC)			
	>24	3.26	1.06	2.18	0.004
Blood Pressure					
	Uncontrolled	1.0 (RC)			
	Controlled	1.74	0.10	3.97	0.006
BIPQ					
	Low	1.0 (RC)			
	Moderate	7.84	1.41	16.17	0.001
	High	3.21	1.33	9.36	0.006

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DISCUSSION

Slightly above half (54.9%) of the respondents perceived hypertension as having a moderate threat to their lives which may not be unconnected with the regular health education that is ongoing in the study centre. There are other studies that reported similar findings.[17,18] Adisa et al in Sokoto however reported that 75% of his sample population perceived hypertensive illness as "benign", meaning a lower threat to live.[19] The differences could be due to difference in the socio-cultural and religious beliefs in the study populations which could influence their perception to illness. Kucukarslan reported that discrepancies in cultural norms between the studies could play a role in the perception of a patient's illness.[20]
In this study, with a perception of moderate threat to live from hypertensive illness, the respondents were observed to score highest in the illness perception items of both treatment control and understanding. This implies that the respondents seek for control for their hypertensive illness from medical treatment and have a high perceived understanding of the hypertension. This finding also shows that the respondents believe in the necessity of medicine prescribed by physicians to control Blood Pressure. It has been posited that patients with hypertension believed that treatment can control BP and its consequences.[17] Ahmad et al. also reported the highest score for treatment control, followed by coherence and timeline.[17] It is also worth noting that while both treatment control and personal control were noted to be statistically significant outcomes of items of a moderate illness perception, respondents believe more in the treatment/medical interventions than personal control. Perhaps, this might be because some studies have reported that personal control was seen as tiring and difficult to follow thus preferring treatment control than personal control.[17,21]
The respondents in this study had various opinions about the factors that possibly caused their illness. Even though the cause of hypertension is unknown according to biomedical perspectives of hypertension,[22] the most common cause of hypertension as perceived by respondents in this study was stress followed by others like heredity, age, and spiritual attack; weight gain/obesity and then excessive salty consumption/unhealthy diet. The risk factors that may attribute to hypertension can be classified as modifiable and non-modifiable risk factors.[23] The perceived causes of hypertension in this study could be comparable to these risk factors since majority of the patients endorsed the causes of hypertension as modifiable, specifically stress, weight gain/obesity and excessive salt consumption. Moreover, the staple foods of Ado-Ekiti community include salty, starchy, spicy and oily foods. Hence, respondents might have perceived diet, stress and obesity to be the overriding cause of their hypertension. This is in keeping with the findings of Rahman et al. which also reported diet and stress as the perceived risk factors of hypertension.[24]
In this study, more than half of the respondents 195 (51.2%) had good medication adherence, while 48.8% had poor medication adherence. This result is comparable to the findings of Osamor and Owummi in their work on factors associated with treatment compliance in hypertension in Southwest Nigeria, which reported that 51% of the respondents had good adherence.[25] The findings in this study (51%) was also comparable to a study done in a tertiary institution in Zimbabwe.[26] It is worthy to note that the level of medication adherence obtained in this study was higher than results obtained in most Nigerian studies.[5,27,28] The proportion of respondents with good antihypertensive medication adherence in this study was higher compared to other studies performed in Ghana(7%), Nigeria(8%), and Palestine(36%).[4,29,30] This variation may be due to differences in study groups, method of assessment of adherence, and drug regimens and complexities. A systematic review and meta-analysis of 28 similar studies (in 15 countries)[31] showed a similar level of antihypertensive medication adherence rate found among respondents in this study; this was even higher than 44.7% reported by Ajayi et al in the same health institution but among patients in the cardiology clinic.[32] This difference may be due to the fact that hypertensives attending cardiology clinic might have had complications and had co-morbid conditions, as most patients in the clinic were referred from the GOPC and occasionally other specialties clinics of the institution. However, it was lower than result obtained in another study in Ethiopia which found 64.6% good adherence, a figure higher than that found in this study (51.2%).[33] The difference is possibly because more than half (59.6%) of the patients in Ethiopia study received free medical care, and adherence was hinged not only on medication but other factors like keeping follow up appointment.
More than half of the respondents (61.9%) had their BP under control as per the JNC-8 recommendation. This is higher compared to other studies that used JNC-7 or other older versions. Hypertension control status was significantly associated with medication adherence. The logistic regression of the factors associated with the respondents' medication adherence in this study showed that BP control was found to be an independent predictor of medication adherence of the respondents. Respondents with controlled BP were 1.74 times more likely to have good medication adherence than those with uncontrolled BP. Conversely, a study by Dennis et al.[34] reported a higher proportion (91.12%) had uncontrolled BP. The reason for this finding in this

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study might also be because of the use of 'single pill combination drugs' which was encouraged to reduce pill burden among respondents thereby increasing adherence. This was consistent with studies by Saarti et al. and Ramli et al.[18,35]

In this study, majority of respondents (81.4%) had hypertension for more than two years. Many other studies reported longer duration of hypertension with a mean duration of 8.25 years in a study by Ramli et al.[35] Duration of hypertension was significantly associated with medication adherence, while longer duration of hypertension of more than two years was found to be an independent predictor of medication adherence. This finding could be due to regular clinic visits and patients having confidence overtime in the effectiveness of the antihypertensive medications controlling their hypertension.

Relationship between illness perception and medication adherence among respondents. This study found that the level of illness perception was significantly associated with medication adherence of respondents at p-value 0.003. It supported the predictions of the common sense model.[36] More than half 74(50.7%) of respondents with low illness perception had poor medication adherence which is similar to a study by Rajpura and Nayak which found that more benign illness perceptions, along with greater perceived burden of illness, lead to lower medication adherence.[14] Respondents with moderate illness perception were 7.84 times more likely to have good medication adherence than those with low threatening perception of their hypertension. Conversely, low illness perception was not an independent predictor of medication adherence among the study participants. This results were consistent with findings of previous studies.[10,14,37,38] Chen et al. also discussed the significant association between illness perception and treatment adherence.[38] The results were also consistent with the findings of earlier studies[10,14,37] Contrary to this study, two other studies reported they did not find a significant association between illness perception and medication adherence.[18,39] These studies used different methods to assess illness perception and medication adherence. Farmer explained that differences in the types of tools used might make a direct comparison between illness perception and medication adherence complicated and might result in discrepancies in the results.[40]

Limitations of the Study

This was a hospital based cross sectional study design, from which we draw associations that might not be an absolute reflection of the outcome in the general population. In addition, it measured illness perception and medication adherence among patients at a point in time, hence any changes in the trend of these variables over time could not be assessed.

CONCLUSION

Overall, more than half of the respondents (51.2%) of the patients had good adherence to their antihypertensive medications, while 48.8 percent had poor medication adherence. Moderate and high illness perceptions were found to be independent predictors of medication adherence among the respondents.

Statements and Declarations:

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Conflicts of Interest: The authors declare that they have no conflicts of interest.

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Ethical Consideration: Ethical approval was obtained from the Institution Review Board of Ekiti State University Teaching Hospital with approval number (EKSUTH/A64/2019/02/007) before the study was conducted.

REFERENCES

1. World health organization: A global brief on hypertension: Silent killer, global public health crisis (world health day 2013) Geneva: WHO 2013

2. Njoku PO, Enomina M, Obehigbe EE, Mbah IO, Okoro EO, Essen ME, et al. Pattern of non-communicable diseases seen in a tertiary hospital in Keffi, North Central Nigeria. Nig J Cardiol 2019;16(1):60-65.

3. Ogah OS, Okpechi I, Chukwuonye II, Akinyemi JO, Onwubere BJ, Falase AO, et al. Blood pressure, prevalence of hypertension and hypertension related complications in Nigerian Africans: A review. World J Cardiol. 2012;4(12):327-340.

4. Okwuonu CG, Ojimadu NE, Okaka EI, Akemokwe FM. Patient-related barriers to hypertension control in a Nigerian population. Int J Gen Med. 2014;7:345-353.

5. Akintunde AA, Akintunde TS. Antihypertensive medications adherence among Nigerian hypertensive subjects in a specialist clinic compared to a general outpatient clinic. Ann Med Health Sci Res 2015;5(3):173-178.

6. Agbor VN, Takah NF, Aminde LN. Prevalence and factors associated with medication

Print ISSN: 0189-9287 Online ISSN: 2992-345X

adherence among patients with hypertension in sub-Saharan Africa: protocol for a systematic review and meta-analysis. BMJ Open.2018;8(3):e020715.

7. Shahin W, Kennedy G, Stupans I. The impact of personal and cultural beliefs on medication adherence of patients with chronic illnesses: a systematic review. Patient Prefer Adherence. 2019;13:1019-1035.

8. Leventhal H, Meyer D, Nerenz D. The common sense representation of illness danger. In S.E. Rachman (Ed.), Medical Psychology. 1980;2:7-30.

9. Broadbent E, Petrie KJ, Main J. The Brief Illness Perception Questionnaire. Journal of Psychosomatic Research 2006;60(6):631–637.

10. Hsiao CY, Chang C, Chen CD. An investigation on illness perception and adherence among hypertensive patients. Kaohsiung Journal of Medical Sciences 2012;28(8):442-447.

11. Ekiti State Directorate of ICT. Available from ekitistate.gov.ng/about-Ekiti/population-figures. Accessed 23/09/18.

12. PopulationStat. Ado-Ekiti, Nigeria Population. Accessed at https://populationstat.com/nigeria/ado-ekiti. on 12th august, 2020.

13. Araoye MO. Subject selection: sample size determination. In: MO Araoye, editor. Research methodology with statistics for health and social sciences. Nathadex 2003;1:117-118.

14. Rajpura J, Nayak R. Medication adherence in a sample of elderly suffering from hypertension: Evaluating the influence of illness perceptions, treatment beliefs and illness burden. Journal of Managed Care Pharmacy 2014;20(1):58-65.

15. Ibrahim OA, Olaniyan FA, Sule AG, Ibrahim BY. Socio-demographic and clinical factors affecting adherence to antihypertensive medications and blood pressure control among patients attending the family practice clinic in a tertiary hospital in northern Nigeria. Nigerian Journal of Family Practice. 2018;9(1):39-49

16. Rasaq OS, Sanni AM, Odeigah OL, Abdullateef GS, Issa BA, Lawal SI, et al. Adherence to Antihypertensive medications and associated factors among patients in a Nigerian family practice setting. Ijmrps 2015;2(5):2394-9414

17. Norfazilah A, Samuel A, Law P, Ainaa A, Asmawati MN. Illness perception among hypertensive patients in primary care centre UKMMC. Malays Fam Physician. 2013;8(3):19-25.

18. Saarti S, Hajj A, Karam L, Jabbour H, Sarkis A, El Osta N, et al. Association between adherence, treatment satisfaction and illness perception in hypertensive patients. Journal of Human Hypertension. 2016;30(5):341-345

19. Adisa R, Ilesanmi OA, Fakeye TO. Treatment adherence and blood pressure outcome among hypertensive out-patients in two tertiary hospitals in Sokoto, Northwestern Nigeria. BMC Cardiovasc Discord. 2018;25:194.

20. Kucukarslan SN. A review of published studies of patients' illness perceptions and medication adherence: Lessons learned and future directions. Research in Social and Administrative Pharmacy. 2012;8(5):371-382

21. Nivedita S. Illness perception and coping among hypertension patients. Research Journal of Recent Sciences 2015;4:270-273.

22. Kaplan NM, Victor RG. Kaplan's Clinical Hypertension. 11th ed. Philadelphia, USA: Lippincott Williams & Wilkins (LWW); 2014.1-461.

23. Ibekwe R. Modifiable risk factors of hypertension and socio-demographic profile in Oghara, Delta State; prevalence and correlates. Ann Med Health Sci Res 2015;5:71-77.

24. Rahman AR, Wang JG, Kwong GM, Morales DD, Sritara P, Sukmawan R. Perception of hypertension management by patients and doctors in Asia: potential to improve blood pressure control. Asia Pacific Family Medicine. 2015;14(1):2

25. Osamor PE, Owummi BE. Factors associated with treatment compliance in hypertension in south west Nigeria. J Health Population Nutr. 2011;29:619-628.

26. Mukora-Mutseyekwa FN, Chadambuka EM. Drug adherence behaviour among hypertensive out-patients at a tertiary health institution in Manicaland province, Zimbabwe. Patient Prefer Adherence. 2013;7(3):65–70.

27. Boima V, Ademola AD, Odusola AO, Agyekum F, Nwafor CE, Cole H, et al. Factors associated with medication non-adherence among hypertensive in Ghana and Nigeria. Int J Hypertens. 2015;2015:1-8

28. Iloh GUP, Ofoedu JN, Njoku PU, Amadi AN, Godswill-Uko EU. Medication adherence and blood pressure control amongst adults with primary hypertension attending a tertiary hospital primary care clinic in Eastern Nigeria. Afr Journal of Primary Health Care and Family Medicine 2013;5(1):123-126.

29. Zyoud SH, Al-Jabi SW, Sweileh WM, Morisky DE. Relationship of treatment satisfaction to medication adherence. Findings from a cross-sectional

Print ISSN: 0189-9287 Online ISSN: 2992-345X

survey among hypertensive patients in Palestine. Health Qual Life Outcomes. 2013;11:191.

30. Kretchy IA, Owusu-Daaku FT, Danquah S. Locus of control and antihypertensive medication adherence in Ghana. Pan Afr Med J. 2014;17Suppl 1:13

31. Abegaz TM, Shehab A, Gebreyohannes EA, Bhagavathula AS, Elnour AA. Nonadherence to antihypertensive drugs. a systematic review and meta-analysis. Medicine.2017; 96(4): e5641.

32. Ajayi EA, Adeoti AO, Ajayi IA, Ajayi AO, Adeyeye VO. Adherence to antihypertensive medications and some of its clinical implications in patients seen at a tertiary hospital in Nigeria. IOSR J Dental Med Sci. 2013;8(4):36-40.

33. Ambaw DA, Alemie GA, Yohannes SM, Mengesha ZB. Adherence to antihypertensive treatment and associated factors among patients on follow up at University of Gondor Hospital, Northwest Ethiopia. BMC Public Health 2012;12:282.

34. Dennis T, Meera NK, Binny K, Sekhar MS, Kishore G, Sasidharan S. Medication adherence and associated barriers in hypertension management in India. Cardiovascular Disease Prevention and Control. 2011;6:9-13.

35. Ramli A, Ahmad NS, Paraidathathu T. Medication adherence among hypertensive patients of primary health clinics in Malaysia. Patient Preference and Adherence 2012;6:613-622.

36. Leventhal H, Phillips LA, Burns E. The Common-Sense Model of Self-Regulation (CSM): a dynamic framework for understanding illness self-management. J Behav Med. 2016;39(6):935-946

37. Ross S, Walker A, MacLeod MJ. Patient compliance in hypertension: role of illness perceptions and treatment beliefs. J Hum Hypertens 2004;18(9):607-613.

38. Chen SL, Tsai JC, Lee WL. The impact of illness perception on adherence to therapeutic regimens of patients with hypertension in Taiwan. J ClinNurs.2009;18:2234-2244.

39. Spikes T, Higgins M, Lewis T, Dunbar SB. The associations among illness perceptions, resilient coping, and medication adherence in young adult hypertensive black women. J ClinHypertens. 2019;21:1695-1714

40. Farmer KC. Leventhal's common-sense model and medication adherence. Research in Social and Administrative Pharmacy. 2012;8(5):355-356.

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